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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,332	04/22/2005	Michael Arndt	10191/3858	9142

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EXAMINER	
JOHNSTON, PHILLIP A	

ART UNIT	PAPER NUMBER
2881	

MAIL DATE	DELIVERY MODE
01/22/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/532,332	ARNDT, MICHAEL	
	Examiner	Art Unit	
	PHILLIP A. JOHNSTON	2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 November 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 April 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

1. This Office Action is submitted in response to the amendment filed 11-17-2008, wherein new claims 19-22 have been amended. Claims 7-22 are pending.

Response to Arguments

2. Applicant's arguments filed 11-17-2008 have been fully considered but they are not persuasive.

3. Applicant argues at page 7 of the remarks regarding independent claims 7 and 10 that, the Office Action (and the prior Office Action) appears to rely upon the Fabry-Perot filters 12, 13, 14, 15 as being supposedly akin to the first and second layers of the infrared source of claim 7. However, these elements also do not disclose two different layers having two different infrared radiation absorption characteristics. Instead, because filters 12, 13, 14, 15 are Fabry-Perot filters, they are based on interference and reflection phenomena, as is generally the case with Fabry-Perot filters. Therefore, filters 12, 13, 14, 15 of the "Bayly" reference do not disclose two different layers having two different infrared radiation absorption characteristics, as provided for in the context of the claimed subject matter. The secondary "Spaeth" reference does not cure, and is not asserted to cure, this critical deficiency.

The examiner disagrees.

The applicant is respectfully directed to Bayly Col. 4, line 9-16, that discloses the use of Fabry-Perot filters capable of providing a band width of about .2μ to .3μ, where each filter includes two semi-transparent reflecting layers.

One of ordinary skill would interpret from the Bayly reference above that a Fabry -Perot filter having semi-transparent reflective layers, is a filter with both semi-transparent optical properties and reflective optical properties combined in the same layer, where the semi-transparent portion both transmits and absorbs a percentage of the light, and the reflecting portion of the layer reflects a portion of the light. See; for example, the aluminum semi-transparent reflective layer described in USPN 2,590,906 to Tripp, as thin metallic layer 12 of silver or aluminum having transmission between 25% and 65%; a reflectance of 50% to 10%, and an absorption of some 25%.

In addition, one of ordinary skill would expect the two semi-transparent reflecting layers of Bayly to have different transmission characteristics, since there would be no advantage provided by both having the same transmission characteristic, and the combined use of two layers each having the same transmission characteristic would reduce the total intensity of the wavelengths transmitted through the two layers, thereby reducing the sensitivity of the sensor.

The applicant is also respectfully directed to Spaeth Col. 4, line 6-44, where the thickness of silver or aluminum layers are adjusted to provide the desired infrared transmission bandwidth of Fabry-Perot filters.

Therefore in light of the above, it is the examiners contention that the combination of Bayly and Spaeth discloses the use of two filter layers where two different transmission characteristics are produced by absorption and reflection.

5. The rejection of claims 7-22 under 35 USC 103(a) are maintained.

6. All claims stand finally rejected.

Claims Rejection – 35 U.S.C. 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 7-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 3,211,961 to Bayly, in view of Spaeth, USPN 4,158,133.

4. Regarding claims 7 and 10, Bayly teaches a gas analyzer having;

(a) An infra-red radiation source 10. Col. 4, line 1-9;

(b) Detector 19. Col. 4, line 24-30;

(c) One of interference filters 12-15 positioned between the source and the detector covering visible and infrared wavelengths ranging from 0.2μ to 6μ. Col. 4, line 31-44;

(d) Each filter comprises two semi-transparent reflecting layers separated by a transparent medium whose thickness is equal to half the wavelength of light to be transmitted. The combined layers of the filters typically produce a bandpass (transmission characteristic) wavelength that is centered at 0.5 μ increments, where the bandwidth of each filter is about 0.2μ to 0.3μ. Col. 4, line 12-36.

One of ordinary skill would interpret from the above that a filter having a semi-transparent reflective layer, is a filter with semi-transparent optical properties and reflective optical properties combined in the same layer, where

the semi-transparent portion both transmits and absorbs a percentage of the light, and the reflecting portion of the layer reflects a portion of the light.

One of ordinary skill would also expect the two semi-transparent reflecting layers of Bayly to have different transmission characteristics, since the combined use of two layers each having the same transmission characteristic would significantly reduce the total intensity of the desired wavelengths transmitted through the two layers, thereby reducing the sensitivity of the claimed sensor.

Bayly fails to teach layers having transmission characteristics produced by absorption of infrared radiation.

Spaeth discloses a multilayer Fabry-Perot filter where the index of refraction and thickness of aluminum or silver layers are varied to provide a desired transmission bandwidth in the infrared range. See Col. 4, line 6-60.

One of ordinary recognizes that Spaeth's use of aluminum layers on a filter provides a transmission characteristic that is produced by both reflection and absorption.

Spaeth modifies Bayly to provide a filter for infrared wavelengths that provides elimination of wavelengths other than the bandpass wavelength by reflection and absorption.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that Bayly would use the aluminum filter layers of Spaeth to produce thin film filters which transmit a relatively narrow band of optical radiation. Col. 2, line 12-15.

5. Regarding claims 8 and 11, Bayly teaches the use of multi-layered band pass filters, having selectable transmission characteristics, where the combined layers of the filters typically produce a bandpass (transmission characteristic) wavelength over the range from0.2μ to 6μ, centered at 0.5 μ increments, where the bandwidth of each filter is about 0.2μ to 0.3μ. Col. 4, line 12-36.

6. Regarding claim 9, the combination of Bayly and Spaeth discloses the use of glass, Silicon, and Germanium layers. See Spaeth Col. 2, line 34-40.

7. Regarding claim 12, the combination of Bayly and Spaeth discloses the use of Fabry-Perot filters. Col. 4, line 1-5.

8. Regarding claims 13, 14, 16, and 17, the combination of Bayly and Spaeth discloses locating the filter layers in a line of transmission from the source. Col. 4, line 1-9.

9. Regarding claims 15 and 18, the combination of Bayly and Spaeth discloses layers that are serially placed on top of each other as described above regarding claims 7 and 10, and where layers are deposited on both surfaces of a transparent material (directly contacting). See Col. 4, line 9-12.

10. Regarding the newly added claims 19-22, the combination of Bayly and Spaeth discloses all the limitations therein, as describe above regarding claims 7-18.

Conclusion

7. The Amendment filed on 11-17-2008 has been considered but is ineffective to overcome the references cited in the Office Action mailed 9-8-2008.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications should be directed to Phillip Johnston whose telephone number is (571) 272-2475. The examiner can normally be reached on Monday-Friday from 7:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor Robert Kim can be reached at (571) 272-2293. The fax phone number for the organization where the application or proceeding is assigned is 571 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PJ
January 14, 2009

/ROBERT KIM/

Supervisory Patent Examiner, Art Unit 2881

Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
	10/532,332	ARNDT, MICHAEL	
	Examiner	Art Unit	
	PHILLIP A. JOHNSTON	2881	